

SEQUENCE LISTING

<110> Bukh, Jens
Purcell, Robert
Yanagi, Masayuki
Emerson, Suzanne

<120> Infectious cDNA Clone of GB virus B and Uses Thereof

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Thr Glu Gln Ala Gly Glu Ile Gln Val Leu Ser Thr Val Thr Gln Ser			
1060	1065	1070	
Phe Leu Gly Thr Ser Ile Ser Gly Val Leu Trp Thr Val Tyr His Gly			
1075	1080	1085	
Ala Gly Asn Lys Thr Leu Ala Gly Ser Arg Gly Pro Val Thr Gln Met			
1090	1095	1100	
Tyr Ser Ser Ala Glu Gly Asp Leu Val Gly Trp Pro Ser Pro Pro Gly			
1105	1110	1115	1120
Thr Lys Ser Leu Glu Pro Cys Thr Cys Gly Ala Val Asp Leu Tyr Leu			
1125	1130	1135	
Val Thr Arg Asn Ala Asp Val Ile Pro Ala Arg Arg Gly Asp Lys			
1140	1145	1150	
Arg Gly Ala Leu Leu Ser Pro Arg Pro Leu Ser Thr Leu Lys Gly Ser			
1155	1160	1165	
Ser Gly Gly Pro Val Leu Cys Pro Arg Gly His Ala Val Gly Val Phe			
1170	1175	1180	
Arg Ala Ala Val Cys Ser Arg Gly Val Ala Lys Ser Ile Asp Phe Ile			
1185	1190	1195	1200
Pro Val Glu Thr Leu Asp Ile Val Thr Arg Ser Pro Thr Phe Ser Asp			

1205

1210

1215

Asn Ser Thr Pro Pro Ala Val Pro Gln Thr Tyr Gln Val Gly Tyr Leu
 1220 1225 1230

His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro Val Ala Tyr
 1235 1240 1245

Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala
 1250 1255 1260

Thr Leu Gly Phe Gly Ala Tyr Leu Ser Lys Ala His Gly Ile Asn Pro
 1265 1270 1275 1280

Asn Ile Arg Thr Gly Val Arg Thr Val Thr Thr Gly Ala Pro Ile Thr
 1285 1290 1295

Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys Ala Gly Gly
 1300 1305 1310

Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ala Val Asp Ser Thr
 1315 1320 1325

Thr Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly
 1330 1335 1340

Val Arg Leu Thr Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr
 1345 1350 1355 1360

Thr Pro His Pro Asn Ile Glu Glu Val Ala Leu Gly Gln Glu Gly Glu
 1365 1370 1375

Ile Pro Phe Tyr Gly Arg Ala Ile Pro Leu Ser Tyr Ile Lys Gly Gly
 1380 1385 1390

Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala
 1395 1400 1405

Ala Ala Leu Arg Gly Met Gly Leu Asn Ser Val Ala Tyr Tyr Arg Gly
 1410 1415 1420

Leu Asp Val Ser Val Ile Pro Thr Gln Gly Asp Val Val Val Ala
 1425 1430 1435 1440

Thr Asp Ala Leu Met Thr Gly Tyr Thr Gly Asp Phe Asp Ser Val Ile
 1445 1450 1455

Asp Cys Asn Val Ala Val Thr Gln Val Val Asp Phe Ser Leu Asp Pro

1460

1465

1470

Thr Phe Thr Ile Thr Thr Gln Ile Val Pro Gln Asp Ala Val Ser Arg
1475 1480 1485

Ser Gln Arg Arg Gly Arg Thr Gly Arg Gly Arg Leu Gly Ile Tyr Arg
1490 1495 1500

Tyr Val Ser Thr Gly Glu Arg Ala Ser Gly Met Phe Asp Ser Val Val
1505 1510 1515 1520

Leu Cys Glu Cys Tyr Asp Ala Gly Ala Ala Trp Tyr Glu Leu Thr Pro
1525 1530 1535

Ser Glu Thr Thr Val Arg Leu Arg Ala Tyr Phe Asn Thr Pro Gly Leu
1540 1545 1550

Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Ala Val Phe Thr Gly
1555 1560 1565

Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ser Gly
1570 1575 1580

Glu Asn Phe Ala Tyr Leu Thr Ala Tyr Gln Ala Thr Val Cys Ala Arg
1585 1590 1595 1600

Ala Lys Ala Pro Pro Pro Ser Trp Asp Val Met Trp Lys Cys Leu Thr
1605 1610 1615

Arg Leu Lys Pro Thr Leu Val Gly Pro Thr Pro Leu Leu Tyr Arg Leu
1620 1625 1630

Gly Ser Val Thr Asn Glu Val Thr Leu Thr His Pro Val Thr Lys Tyr
1635 1640 1645

Ile Ala Thr Cys Met Gln Ala Asp Leu Glu Val Met Thr Ser Thr Trp
1650 1655 1660

Val Leu Ala Gly Gly Val Leu Ala Ala Val Ala Ala Tyr Cys Leu Ala
1665 1670 1675 1680

Thr Gly Cys Val Cys Ile Ile Gly Arg Leu His Ile Asn Gln Arg Ala
1685 1690 1695

Val Val Ala Pro Asp Lys Glu Val Leu Tyr Glu Ala Phe Asp Glu Met
1700 1705 1710

Glu Glu Cys Ala Ser Arg Ala Ala Leu Ile Glu Glu Gly Gln Arg Ile

1715

1720

1725

Ala Glu Met Leu Lys Ser Lys Ile Gln Gly Leu Leu Gln Gln Ala Ser
 1730 1735 1740

Lys Gln Ala Gln Asp Ile Gln Pro Thr Val Gln Ala Ser Trp Pro Lys
 1745 1750 1755 1760

Val Glu Gln Phe Trp Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile
 1765 1770 1775

Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala Val Ala
 1780 1785 1790

Ser Met Met Ala Phe Ser Ala Ala Leu Thr Ser Pro Leu Ser Thr Ser
 1795 1800 1805

Thr Thr Ile Leu Leu Asn Ile Leu Gly Gly Trp Leu Ala Ser Gln Ile
 1810 1815 1820

Ala Pro Pro Ala Gly Ala Thr Gly Phe Val Val Ser Gly Leu Val Gly
 1825 1830 1835 1840

Ala Ala Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu
 1845 1850 1855

Ala Gly Tyr Gly Ala Gly Ile Ser Gly Ala Leu Val Ala Phe Lys Ile
 1860 1865 1870

Met Ser Gly Glu Lys Pro Ser Met Glu Asp Val Val Asn Leu Leu Pro
 1875 1880 1885

Gly Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Ile Cys Ala Ala
 1890 1895 1900

Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met
 1905 1910 1915 1920

Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ala Pro Thr
 1925 1930 1935

His Tyr Val Thr Glu Ser Asp Ala Ser Gln Arg Val Thr Gln Leu Leu
 1940 1945 1950

Gly Ser Leu Thr Ile Thr Ser Leu Leu Arg Arg Leu His Asn Trp Ile
 1955 1960 1965

Thr Glu Asp Cys Pro Ile Pro Cys Gly Gly Ser Trp Leu Arg Asp Val

1970	1975	1980
Trp Asp Trp Val Cys Thr Ile Leu Thr Asp Phe Lys Asn Trp Leu Thr		
1985	1990	1995
Ser Lys Leu Phe Pro Lys Met Pro Gly Leu Pro Phe Val Ser Cys Gln		
2005	2010	2015
Lys Gly Tyr Lys Gly Val Trp Ala Gly Thr Gly Ile Met Thr Thr Arg		
2020	2025	2030
Cys Pro Cys Gly Ala Asn Ile Ser Gly Asn Val Arg Leu Gly Ser Met		
2035	2040	2045
Arg Ile Thr Gly Pro Lys Thr Cys Met Asn Ile Trp Gln Gly Thr Phe		
2050	2055	2060
Pro Ile Asn Cys Tyr Thr Glu Gly Gln Cys Val Pro Lys Pro Ala Pro		
2065	2070	2075
Asn Phe Lys Val Ala Ile Trp Arg Val Ala Ala Ser Glu Tyr Ala Glu		
2085	2090	2095
Val Thr Gln His Gly Ser Tyr His Tyr Ile Thr Gly Leu Thr Thr Asp		
2100	2105	2110
Asn Leu Lys Val Pro Cys Gln Leu Pro Ser Pro Glu Phe Phe Ser Trp		
2115	2120	2125
Val Asp Gly Val Gln Ile His Arg Phe Ala Pro Thr Pro Lys Pro Phe		
2130	2135	2140
Phe Arg Asp Glu Val Ser Phe Cys Val Gly Leu Asn Ser Phe Val Val		
2145	2150	2155
2160		
Gly Ser Gln Leu Pro Cys Asp Pro Glu Pro Asp Thr Asp Val Leu Met		
2165	2170	2175
Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Thr Ala Ala Arg		
2180	2185	2190
Arg Leu Ala Arg Gly Ser Pro Pro Ser Glu Ala Ser Ser Ser Ala Ser		
2195	2200	2205
Gln Leu Ser Ala Pro Ser Leu Arg Ala Thr Cys Thr Thr His Gly Lys		
2210	2215	2220
Ala Tyr Asp Val Asp Met Val Asp Ala Asn Leu Phe Met Gly Gly Asp		

2225	2230	2235	2240
Val Thr Arg Ile Glu Ser Gly Ser Lys Val Val Val Leu Asp Ser Leu			
2245	2250	2255	
Asp Pro Met Val Glu Glu Arg Ser Asp Leu Glu Pro Ser Ile Pro Ser			
2260	2265	2270	
Glu Tyr Met Leu Pro Lys Lys Arg Phe Pro Pro Ala Leu Pro Ala Trp			
2275	2280	2285	
Ala Arg Pro Asp Tyr Asn Pro Pro Leu Val Glu Ser Trp Lys Arg Pro			
2290	2295	2300	
Asp Tyr Gln Pro Ala Thr Val Ala Gly Cys Ala Leu Pro Pro Pro Arg			
2305	2310	2315	2320
Lys Thr Pro Thr Pro Pro Arg Arg Arg Arg Thr Val Gly Leu Ser			
2325	2330	2335	
Glu Asp Ser Ile Gly Asp Ala Leu Gln Gln Leu Ala Ile Lys Ser Phe			
2340	2345	2350	
Gly Gln Pro Pro Pro Ser Gly Asp Ser Gly Leu Ser Thr Gly Ala Gly			
2355	2360	2365	
Ala Ala Asp Ser Gly Ser Gln Thr Pro Pro Asp Glu Leu Ala Leu Ser			
2370	2375	2380	
Glu Thr Gly Ser Ile Ser Ser Met Pro Pro Leu Glu Gly Glu Leu Gly			
2385	2390	2395	2400
Asp Pro Asp Leu Glu Pro Glu Gln Val Glu Pro Gln Pro Pro Pro Gln			
2405	2410	2415	
Gly Gly Val Ala Ala Pro Gly Ser Asp Ser Gly Ser Trp Ser Thr Cys			
2420	2425	2430	
Ser Glu Glu Asp Asp Ser Val Val Cys Cys Ser Met Ser Tyr Ser Trp			
2435	2440	2445	
Thr Gly Ala Leu Ile Thr Pro Cys Ser Pro Glu Glu Lys Leu Pro			
2450	2455	2460	
Ile Asn Pro Leu Ser Asn Ser Leu Leu Arg Tyr His Asn Lys Val Tyr			
2465	2470	2475	2480
Cys Thr Thr Lys Ser Ala Ser Leu Arg Ala Lys Lys Val Thr Phe			

2485

2490

2495

Asp Arg Met Gln Val Leu Asp Ser Tyr Tyr Asp Ser Val Leu Lys Asp
2500 2505 2510

Ile Lys Leu Ala Ala Ser Lys Val Thr Ala Arg Leu Leu Thr Met Glu
2515 2520 2525

Glu Ala Cys Gln Leu Thr Pro Pro His Ser Ala Arg Ser Lys Tyr Gly
2530 2535 2540

Phe Gly Ala Lys Glu Val Arg Ser Leu Ser Gly Arg Ala Val Asn His
2545 2550 2555 2560

Ile Lys Ser Val Trp Lys Asp Leu Leu Glu Asp Ser Glu Thr Pro Ile
2565 2570 2575

Pro Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Asp Pro Thr
2580 2585 2590

Lys Gly Gly Lys Lys Ala Ala Arg Leu Ile Val Tyr Pro Asp Leu Gly
2595 2600 2605

Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Ile Thr Gln Lys Leu
2610 2615 2620

Pro Gln Ala Val Met Gly Ala Ser Tyr Gly Phe Gln Tyr Ser Pro Ala
2625 2630 2635 2640

Gln Arg Val Glu Phe Leu Leu Lys Ala Trp Ala Glu Lys Lys Asp Pro
2645 2650 2655

Met Gly Phe Ser Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr Glu
2660 2665 2670

Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg Ala Cys Ser Leu Pro
2675 2680 2685

Glu Glu Ala His Thr Ala Ile His Ser Leu Thr Glu Arg Leu Tyr Val
2690 2695 2700

Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr Cys Gly Tyr Arg Arg
2705 2710 2715 2720

Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met Gly Asn Thr Ile Thr
2725 2730 2735

Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala Ala Gly Ile Ile Ala

2740

2745

2750

Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val Val Ile Ser Glu Ser
2755 2760 2765

Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg Ala Phe Thr Glu Ala
2770 2775 2780

Met Thr Arg Tyr Ser Ala Pro Pro Gly Asp Pro Pro Arg Pro Glu Tyr
2785 2790 2795 2800

Asp Leu Glu Leu Ile Thr Ser Cys Ser Ser Asn Val Ser Val Ala Leu
2805 2810 2815

Gly Pro Gln Gly Arg Arg Tyr Tyr Leu Thr Arg Asp Pro Thr Thr
2820 2825 2830

Pro Ile Ala Arg Ala Ala Trp Glu Thr Val Arg His Ser Pro Val Asn
2835 2840 2845

Ser Trp Leu Gly Asn Ile Ile Gln Tyr Ala Pro Thr Ile Trp Ala Arg
2850 2855 2860

Met Val Leu Met Thr His Phe Phe Ser Ile Leu Met Ala Gln Asp Thr
2865 2870 2875 2880

Leu Asp Gln Asn Leu Asn Phe Glu Met Tyr Gly Ala Val Tyr Ser Val
2885 2890 2895

Ser Pro Leu Asp Leu Pro Ala Ile Ile Glu Arg Leu His Gly Leu Asp
2900 2905 2910

Ala Phe Ser Leu His Thr Tyr Thr Pro His Glu Leu Thr Arg Val Ala
2915 2920 2925

Ser Ala Leu Arg Lys Leu Gly Ala Pro Pro Leu Arg Ala Trp Lys Ser
2930 2935 2940

Arg Ala Arg Ala Val Arg Ala Ser Leu Ile Ser Arg Gly Gly Arg Ala
2945 2950 2955 2960

Ala Val Cys Gly Arg Tyr Leu Phe Asn Trp Ala Val Lys Thr Lys Leu
2965 2970 2975

Lys Leu Thr Pro Leu Pro Glu Ala Arg Leu Leu Asp Leu Ser Ser Trp
2980 2985 2990

Phe Thr Val Gly Ala Gly Gly Asp Ile Tyr His Ser Val Ser Arg

2995

3000

3005

Ala Arg Pro Arg Leu Leu Leu Phe Gly Leu Leu Leu Leu Phe Val Gly
3010 3015 3020

Val Gly Leu Phe Leu Leu Pro Ala Arg
3025 3030